# Inflation

## Module 13

**ESC Cost Core Training**

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# Inflate the Cost Estimate

- Take the time phased results expressed in Base Year dollars by Fiscal Year

- Apply the appropriate weighted inflation indices

- The results are the Then Year dollars to be used to support budget submissions and exercises

# **Inflation**

AFI 65-502 defines inflation as an "increase in the amount of currency in circulation that results in an increase in the general level of prices."

- Inflationary trends are manifested in cost of living pay increases - the employee has the same purchasing potential as the year before - larger check but not any better off - to counter inflation

# Economic Inflation Theories

Demand-Pull
- the money supply increases more rapidly than the overall supply of goods & services resulting in excess demand which increases the general price level

Cost-Push
- prices are increased proactively to avoid any losses due to the expected deflated value of money

# **Budget Considerations**

- Appropriation (APPN)
  - sometimes called "the color of money"

- Incremental Funding
  - all RDT&E, 3600 APPN

- Full Funding
  - Procurement APPNs: 3010/20/80

# **Terminology**

Base Year
- point of reference for a fixed price level
- usually the FY the program was initially funded

Constant Year
- any specific year representing a fixed price level
- may or may not be the Base Year

Then Year
- any specific FY containing the Total Obligation Authority

# Raw Inflation

Raw Inflation Rate
- a percentage showing the change in prices from the mid-point of one year to that of the next year

Raw Inflation Indices
- provide a means of compounding inflation rates from a Base Year which is assigned a raw inflation index of 1.00
- used to convert from CY or BY dollars of one year to CY or BY dollars of another year

# Raw (Compound) Index for FY97

| FY | Calculation | Raw Inflation Indices |
|----|-------------|----------------------|
| 94 | (1.0/1.028)/1.025/1.006 | .943 |
| 95 | (1.0/1.028)/1.025 | .949 |
| 96 | 1.0/1.028 | .972 |
| 97 | BY assigned value of 1.0 | 1.000 |
| 98 | 1.0 * 1.021 | 1.021 |
| 99 | (1.0 * 1.021) * 1.021 | 1.042 |
| 00 | (1.0 * 1.021) * 1.021 * 1.021 | 1.064 |
| 01 | (1.0 * 1.021) * 1.021 * 1.021 * 1.022 | 1.087 |

# Weighted Inflation Indices

- Combine raw inflation indices and expenditure profiles to show the amount of inflation occurring over the entire period needed to expend the TOA.

- Are used for all Then Year dollar computations in budget submissions such as the POM or BES.

# OSD Outlay Rates (Dec96) Fiscal Year 97 and Beyond

| APPN | YR1 | YR2 | YR3 | YR4 | YR5 | YR6 |
|---|---|---|---|---|---|---|
| 3400 O&M | 40.66 | 47.3 | 6.57 | 5.47 | | |
| 3600 RDT&E | 45.88 | 38.76 | 9.4 | 3.76 | 2.2 | |
| 3010 Aircraft Proc-other | 7.9 | 24.1 | 32.9 | 19.8 | 8.5 | 6.8 |
| 3020 Missile Proc-other | 25.15 | 30.8 | 22.8 | 13.35 | 5.45 | 2.45 |
| 3080 Other Proc | 48.3 | 23.4 | 14.3 | 7.0 | 5.0 | 2.0 |
| 3300 MILCON - AF | 10.8 | 35.0 | 29.0 | 15.0 | 5.0 | 5.2 |

Percent of TOA expended in each year

# A Weighted Inflation Index is Constructed by . . .

- Deriving the raw indices (as in slide 9)

- Dividing the outlay rates by the raw inflation indices

- Summing the results and dividing into 1

# SAF/FMC

[www.saffm.hq.af.mil](www.saffm.hq.af.mil) then click FMC tab
OR

[http://eschq.hanscom.af.mil/c2cost](http://eschq.hanscom.af.mil/c2cost)
- click "References"
- then click "Inflation"

# RDT&EN (Purchases)   Inflation Indices    Base Year: Mid-FY2000

| FY | Inflation Rate % | Raw Index | Weighted Index | Outlay Profile | | | | |
| | | | | YR1 | YR2 | YR3 | YR4 | YR5 |
|---|---|---|---|---|---|---|---|---|
| 90 | 4.0 | 0.821 | 0.840 | 54.36 | 33.88 | 7.91 | 1.32 | 2.53 | 100% |
| 91 | 4.3 | 0.856 | 0.871 | 54.46 | 33.80 | 7.89 | 1.32 | 2.53 | 100% |
| 92 | 2.8 | 0.880 | 0.896 | 47.73 | 38.80 | 9.06 | 1.51 | 2.90 | 100% |
| 93 | 2.7 | 0.904 | 0.917 | 50.00 | 35.20 | 9.80 | 2.20 | 2.80 | 100% |
| 94 | 2.0 | 0.922 | 0.934 | 51.77 | 34.45 | 8.97 | 1.20 | 3.61 | 100% |
| 95 | 1.9 | 0.939 | 0.952 | 49.23 | 36.60 | 9.15 | 2.18 | 2.84 | 100% |
| 96 | 2.0 | 0.958 | 0.968 | 50.90 | 38.69 | 6.31 | 2.34 | 1.76 | 100% |
| 97 | 1.8 | 0.975 | 0.980 | 53.77 | 38.60 | 5.29 | 1.17 | 1.17 | 100% |
| 98 | 0.7 | 0.982 | 0.987 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 99 | 0.8 | 0.990 | 0.997 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 00 | 1.0 | 1.000 | 1.009 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 01 | 1.5 | 1.015 | 1.024 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 02 | 1.5 | 1.030 | 1.040 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 03 | 1.5 | 1.046 | 1.058 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 04 | 2.0 | 1.067 | 1.079 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 05 | 2.0 | 1.088 | 1.101 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |
| 06 | 2.0 | 1.110 | 1.123 | 53.30 | 38.41 | 5.25 | 1.17 | 1.87 | 100% |

# When to Use Raw Indices

| Convert Formula | Index to Use | |
|---|---|---|
| BY$ of one yr to = $BY(y) BY$ of another yr | Raw | [$BY(x)/RI(x)]*RI(y) |
| CY$ of one yr to = $CY(y) CY$ of another yr | Raw | [$CY(x)/RI(x)]*RI(y) |
| BY$ of one yr to = $CY(y) CY$ of another yr | Raw | [$BY(x)/RI(x)]*RI(y) |
| CY$ of one yr to = $BY(y) BY$ of another yr | Raw | [$CY(x)/RI(x)]*RI(y) |

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# When to Use Weighted Indices

| Convert | Index to Use | Formula |
|---|---|---|
| BY$ to TY$ | Weighted | $BY(x)*WI(y) = $TY(y) |
| TY$ to BY$ | Weighted | $TY(x)/WI(x) = $BY(y) |
| CY$ to TY$ | Weighted | $CY(x)*WI(y) = $TY(y) |
| TY$ to CY$ | Weighted | $TY(x)/WI(x) = $CY(y) |
| TY$ to TY$ $TY(y) | Weighted | [$TY(x)/WI(x)]*WI(y) = |

# Inflation in ACE

- ACE contains the official OSD, Air Force, Army, Navy, USMC, and NASA Raw and Weighted Indices for all APPNs.

- Dollars can be input in BY, CY or TY, and by Appropriation.

- ACE normalizes inputs to a designated BY.

- ACE generates reports displaying WBS elements phased by FY in both BY and TY dollars.

# Summary & Review

- Inflation Rates show the percentage change from the mid-point of one year to the mid-point of the next.

- "Dollars" should be defined as BY, CY or TY.

- Estimates for Program Requirements need to include inflation because inflation affects the Real Purchasing Power of Money. POM inputs, BES and TOA are always in Then Year (TY) Dollars.

- Use Weighted Indices to convert to or from TY dollars. Otherwise, use Raw Indices.

- Actuals from a catalog, CPR or CSSR are in CY dollars.

- Use the Raw/Weighted Indices from SAF/FMC.

- Any CY can be designated a BY. Each program has a single BY.

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